History – Technical Requirements 7th Edition, January 2008

The following section:

6th Edition, Rev. 3, June 2006

Is amended:

7th Edition, January 2008

Preface

5: Timber windows and door

The following section:

5.9	Glass and installation of glass:
5.9.1	Glass and panels:
5.9.2	Glazing beads :
5.9.3	Installation of glass:

Is amended:

5.9	Glass/panels and installation of glazing units:
5.9.1	Glass and panels:
5.9.2	Installation of glazing units:

6: PVC windows and doors

The following section:

6.8	Glass and installation of glass:
6.8.1	Glass and panels:
6.8.2	Glazing beads:
6.8.3	Installation of glass:

Is amended:

6.8	Glass/panels and installation of glazing units:
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7: Metal windows and doors

The following section:

7.8	Glass and installation of glass:
7.8.1	Glass and panels:
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Is amended:

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The following section:

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Is amended:

8.3.7	Type testing:

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8.4	Finishing:

8: Timber/aluminium windows and doors

The following section:

8.9	Glass and installation of glass:
8.9.1	Glass and panels:
8.9.2	Glazing beads:
8.9.3	Installation of glass:

Is amended:

8.9	Glass/panels and installation of glazing units:
8.9.1	Glass and panels:
8.9.2	Installation of glazing units:

1. Introduction page 1

The following section:

This edition of the Regulations was approved by the VinduesIndustrien Technical Committee in June 2006.

Is amended:

This edition of the Requirements was approved by the VinduesIndustrien Technical Committee in December 2007.

2. General requirements on the manufacturer

2.4 Brochures and user manuals:

The following section:

For each of the manufacturer's product types there must be a user manual informing about the use and maintenance of the product.

Is amended:

For each of the company's product types there must be a user manual giving information on the storage, handling, installation, use and maintenance of the product as well as safety in use.

2.6 Information about functional testing:

This edition has added:

The test reports must be kept on file for as long as the product remains in production plus at least five years.

2.8 Product liability:

The following section:

…of up to DKK 5 million for death or injury to persons.

Is amended:

…of up to DKK 10 million for death or injury to persons.

This edition has added:

2.9 Consumer safeguards

The window manufacturer must provide a warranty which meets or exceeds that of VinduesIndustrien.

The window manufacturer must further subscribe to a warranty underwriting scheme providing a level of cover for consumers which meets or exceeds the level stated. As an alternative to a warranty underwriting scheme his obligations may be covered by a recognized insurance company registered in Denmark.

The window manufacturer shall be in possession of and under an obligation to produce the warranty documents including the terms and conditions of the warranty at any time the certifying body may request him to do so.

Claims for defects in a delivery under warranty must be made within five years of the delivery date.

The warranty scheme must provide cover in case the supplier cannot or will not make good defects.

Claims are dealt with by Byggeriets Ankenævn, the Appeals Board established by the Danish Consumer Council, the National House Owners Association and the Danish Construction Association. Defects are rectified in accordance with the findings of the Board.

Claims must be covered up to DKK 5,000 incl. VAT for each component/unit and up to DKK 100,000 incl. VAT for each disputed building project.

The warranty underwriting scheme must provide cover for at least DKK 500,000 incl. VAT for each calendar year of the five-year warranty period equal to a minimum of DKK 2,500,000.

3.1 Quality control system documentation

i. Inspection, measuring and test equipment:

The following section:

… have an accuracy as specified in Annex 15.

Is amended:

… have an accuracy as specified in Annex 13.

4.1.1 Inspection frequency:

The following section:

It is a prerequisite for maintaining a product certificate based on the VinduesIndustrien Technical Regulations that the compliance of the manufacturer's products and quality control with the basis on which the certificate was issued is verified by continuous monitoring (inspection visits) twice a year.

Is amended:

It is a prerequisite for maintaining a product certificate based on the VinduesIndustrien Technical Requirements that the compliance of the manufacturer's products and quality control with the basis on which the certificate was issued is verified by continuous monitoring (inspection visits).

4.1.4 Criteria for approval or rejection:

The following section:

…(see 4.1.3 and Annexes 9 and 10).

Is amended:

…(see 4.1.3 and Annex 9).

Stricter control:

The following section:

… upper control levels.

Following the inspection visit with the participation of the person in charge only one visit demonstrating breach of $ØKG_a$ is permitted before revocation of the certificate is implemented. The procedure for both ordinary and stricter control is shown in a flow chart in Annex 10.

Is amended:

… upper control levels.

If $ØKG_a$ is breached at the following visit, the certificate will be revoked.

5. Timber windows and doors

5.1 Burglary prevention

The following section:

It must not be possible to remove a glazing unit in one piece from the outside. (This requirement is assumed to have been met if complying with the rules in 5.9.3, paragraph 2).

Is amended:

It must not be possible to remove a glazing unit in one piece from the outside. (This requirement is considered to have been met if the glazing unit is spot bonded to the inside of the glazing rebate).

Thermal performance

The following section:

Documentation in accordance with DS 418 or DS/EN 10077 parts 1 and 2 must be provided for all data concerning the thermal performance of the products.

If requested by customers, the company must provide information about the window or external door U-value and the proportion of glass in it as well as the total sunlight transmittance and solar energy transmittance of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute ("SBi Anvisning 213").

Is amended:

Documentation in accordance with DS 418 or DS/EN 10077 parts 1 and 2 must be provided for all data concerning the thermal performance of the products.

For each product system, documentation must be provided for a 1230x1480 mm single-light fixed and opening casement window using the manufacturer's standard glazing unit.
For external doors, values must given for a 1230 x 2180 mm standard size panelled door with two standard glazed lights and a mid-rail and a 1230 x 2180 mm flush door.

If requested by a customer, the company must provide information about the U-value (W/m2K) and the proportion of glass ($A_{glazing\ unit}/A_{window}$) of the windows and/or external doors in question as well as the total light transmittance (LT) and solar energy transmittance (g_g) of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute ("SBi Anvisning 213").

5.3 Timber material

The following section:

If there is more than one timber species in the hatched areas of illustrations in Annex 11, …

Is amended:

If there is more than one timber species in the hatched areas of illustrations in Annex 10, …

Spruce *(European Whitewood)**:***

The following section:

The declaration must cover at least the points mentioned in Annex 13.

Is amended:

The declaration must cover at least the points mentioned in Annex 12.

Larch:

The following section:

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.3.2 and the additional definitions and requirements listed under 5.2.4. Timber density must be at least 500 kg/m^3 at a moisture content of 12%.

…The declaration must cover at least the points mentioned in Annex 12.

Is amended:

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.3.2 and the additional definitions and requirements listed under 5.2.4. The mean timber density must be at least 500 kg/m^3 at a moisture content of 12%.

…The declaration must cover at least the points mentioned in Annex 11.

Pine *(European Redwood)**:***

The following section:

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.3.2 and the additional definitions and requirements listed under 5.3.4. Timber density must be at least 500 kg/m^3 at a moisture content of 12%. …

…Each supplier/sawmill must provide a declaration giving details of the pine used. The declaration must cover at least the points mentioned in Annex 12.

Is amended:

- The timber must conform with the specifications regarding definitions and performance requirements listed in the table under 5.3.2 and the additional definitions and requirements listed under 5.3.4. The mean timber density must be at least 500 kg/m^3 at a moisture content of 12%...

…Each supplier/sawmill must provide a declaration giving details of the pine used. The declaration must cover at least the points mentioned in Annex 11.

Requirements for the proportion of heartwood in pine

The following section:

When using treatment systems 1 and 2 – cf. 5.5.2 – the proportion of heartwood in the *hatched* areas in Annex 11 illustrations must constitute at least 60%. In laminated profiles *each* layer in the *hatched* areas of Annex 11 illustrations must have a heartwood proportion of at least 60%.

Is amended:

When using treatment systems 1 and 2 – cf. 5.5.2 – the proportion of heartwood in the *hatched* areas in Annex 10 illustrations must constitute at least 60%. In laminated profiles *each* layer in the *hatched* areas of Annex 10 illustrations must have a heartwood proportion of at least 60%.

Inspection of heartwood proportion - treatment systems 1, 2:

The following section:

The proportion of heartwood in the hatched areas shown in Annex 11 is then recorded.

Is amended:

The proportion of heartwood in the hatched areas shown in Annex 10 is then recorded.

Inspection of heartwood proportion - treatment system 2 ØKO:

The following section:

With the exception of casement heads and frame heads, the proportion of heartwood in the hatched areas shown in Annex 11 is recorded and the heartwood proportion and base coat application of glazing beads checked.

Is amended:

With the exception of casement heads and frame heads, the proportion of heartwood in the hatched areas shown in Annex 10 is recorded and the heartwood proportion and base coat application of glazing beads checked.

5.3.4 Additional definitions and requirements for workpieces in softwood:

Cracks and checks:

The following section:

Performance requirements for cracks and checks are specified in detail in Table 5.1.2

Is amended:

Performance requirements for cracks and checks are specified in detail in Table 5.3.2

Laminated timber:

The following section:

> Both frame and casement timbers may be glue-laminated from smaller laminates. In laminated profiles each laminate in the hatched areas of Annex 11 illustrations must have a heartwood proportion of at least 60%.

Is amended:

> Both frame and casement timbers may be glue-laminated from smaller laminates. In laminated profiles each laminate in the hatched areas of Annex 10 illustrations must have a heartwood proportion of at least 60%.

Inspection and testing:

The following section:

> Approved work instructions and forms for the recording of inspection and test data must be available for all the inspection and testing activities mentioned. All data record forms must be kept for at least 5 years and be accessible to external inspectors.

Is amended:

> Approved work instructions and forms for the recording of inspection and test data must be available for all the inspection and testing activities mentioned. All data record forms must be kept for at least 6 years and be accessible to external inspectors.

Laminated timber:

The following section:

> Both frame and casement timbers may be glue-laminated from smaller laminates. In laminated profiles each laminate in the hatched areas of Annex 11 illustrations must have a heartwood proportion of at least 60%.

Is amended:

> Both frame and casement timbers may be glue-laminated from smaller laminates. In laminated profiles each laminate in the hatched areas of Annex 10 illustrations must have a heartwood proportion of at least 60%.

5.4.2 Design:

The following section:

> By way of example, outward opening windows, hatches and doors must incorporate a sloping cill with a slope of at least 7º. The casement bottom rail and the cill must both incorporate a drip groove. The free gap between casement bottom rail and cill must be sufficiently large at the exterior face to prevent droplets spanning it, min. 8 mm. Frame jamb and head and casement jambs should incorporate water grooves.

Is amended:

> By way of example, outward opening windows, hatches and doors must incorporate a sloping cill with a slope of at least 7º. The casement bottom rail must incorporate a drip groove. The free gap between casement bottom rail and cill must be sufficiently large at the exterior face to prevent droplets spanning it, min. 8 mm. Frame jamb and head and casement jambs should incorporate water grooves.

5.5 Timber preservative treatment

5.5.1 General:

The following section:

> The requirements regarding surface treatment coat thickness apply to all surfaces visible when the unit is closed. In rebates, grooves and on end grain the coat may be thinner; however, it should always be thick enough (covered surface) for the colour of the wood not to show through. The surface treatment must further meet the requirements listed in Annex 16 of these Regulations.

Is amended:

> The requirements regarding surface treatment coat thickness apply to all surfaces visible when the unit is closed. In rebates, grooves and on end grain the coat may be thinner; however, the surface must be nonabsorbent. The surface treatment must further meet the requirements listed in Annex 14 of these Requirements.

5.5.2 Treatment systems for softwood:

The following section:

> The surface must further meet the performance requirements listed in Annex 16 of these Regulations.

Is amended:

> The surface must further meet the performance requirements listed in Annex 14 of these Requirements.

Treatment system 2:

The following section:

The surface must further meet the performance requirements listed in Annex 16 of these Regulations.

Is amended:

The surface must further meet the performance requirements listed in Annex 14 of these Requirements.

Treatment system 2 ØKO:

The following section:

The surface must further meet the performance requirements listed in Annex 16 of these Regulations.

Is amended:

The surface must further meet the performance requirements listed in Annex 14 of these Requirements.

5.5.3 Treatment systems for hardwood:

Treatment system 4: (opaque)

The following section:

The surface must further meet the performance requirements listed in Annex 16 of these Regulations.

Is amended:

The surface must further meet the performance requirements listed in Annex 14 of these Requirements.

5.8.1 Hardware:

The following section:

> Hardware and screws made of materials which are not corrosion resistant and which are fitted outside of the external face of the unit must be hot-galvanized or protected by other surface treatment to ensure resistance to Corrosion Class 4. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 240 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.
>
> Hardware and screws between the wet line and the external face must be made of a material or be protected by a surface treatment which ensures resistance to Corrosion Class 3. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 96 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.
>
> Hardware and screws inside the wet line must be made of a material or protected by a surface treatment which ensures resistance to Corrosion Class 2. This can be documented by salt spray testing in accordance with ISO 9227 for 48 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Is amended:

> Hardware and screws made of materials which are not corrosion resistant and which are fitted outside of the external face of the unit must be hot-galvanized or protected by other surface treatment to ensure resistance to Corrosion Class 4, cf. DS/EN 1670. This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 240 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.
>
> Hardware and screws between the wet line and the external face must be made of a material or be protected by a surface treatment which ensures resistance to Corrosion Class 3, cf. DS/EN 1670. This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 96 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.
>
> Hardware and screws inside the wet line must be made of a material or protected by a surface treatment which ensures resistance to Corrosion Class 2, cf. DS/EN 1670. This can be documented by salt spray testing in accordance with DS/EN ISO 9227 for 48 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.

5.8.2 Fitting:

The following section:

> Hardware grooves must be adapted to the geometrical shape and thickness of the hardware. Grooves or perforations must not cause water ingress to the wall side of frame profiles.

Is amended:

> Hardware grooves must be adapted to the geometrical shape and thickness of the hardware. When drilling or machining frame profiles, the resulting groove or hole must stop short of penetrating the full depth of the profile to avoid water or moisture ingress to the wall side of the profile.

The following section:

5.9 Glass and installation of glass:

5.9.1 Glass and panels:

Individual panes of glass must not cause visual distortion, contain defects in the glass or impurities to a greater extent than described in DS/EN 1279 or DS 1094.0.

Unless requested otherwise by the buyer in writing, sealed glazing units must be DS certified. This means the glazing units must have undergone impartial quality control in accordance with DS/EN 1279 or DS 1094.0 (sealed glazing units, quality control). Glazing units of foreign origin may be used if proof of a similar quality control can be furnished.

Is amended:

5.9 Glass/panels and installation of glazing units:

5.9.1 Glass and panels:

Individual panes of glass must not cause visual distortion or contain defects or impurities in the glass in excess of the criteria for the visual quality of sealed glazing units established by Glasindustrien (the Danish Glass and Glazing Industry Federation).

Sealed glazing units must be manufactured to EN 1279 and the manufacturer of the units be affiliated to an external, accredited certification scheme meeting the requirements of DS/SBC 1279 or similar special requirements.

The following section:

5.9.2 Glazing beads

With the addition of the points below, the design, ventilation, corner joints and fitting etc. of glazing beads must comply with the fitting instructions published by Glasindustrien, see Annex 14.

Normally, the contact face of the glazing bead against the rebate must constitute at least 85% of the height of the bead plus glazing gasket, if fitted. If present, a capillary breaking groove cannot be deducted when calculating the contact face. The height must always be sufficient for the top edge to be flush with casement or frame reveal while the contact face must not exceed twice the height of the bead.

If, exceptionally, the bottom glazing bead has no projection (sliding doors etc.), ventilation holes must be made in the rebate and the bottom of the holes have an outward slope.

In opening-casement transom and mullion windows with (multiple) glazing bars there must be no ventilation holes in the glazing beads of the glazing bars. Ventilation around the glazing units of such windows must be via the bottommost glazing bead or through hidden holes in the cill. Along the sides ventilation may be ensured through a groove in the glazing rebate or openings in the glazing bar ends where they abut the rebate. Where glazing bars cross, holes are drilled in both directions. Grooves in side rebates must not cause water ingress at the casement head.

Other solutions may be accepted if it can be proven that there is sufficient ventilation around the glazing unit(s).
When using glazing tapes care must be taken to cut side glazing beads to exact length as beads which are too long will prevent correct compression of the glazing tape.

If the side glazing beads do not abut the bottom glazing bead tightly, the end grain of the side glazing beads must be sealed and the appropriate distance between side and bottom glazing bead be given in the drawings.

Glazing beads should be fixed using nails, pins and screws with surface coating or treatment meeting the requirements for use in Corrosion Class 3.

Fixing with pins which penetrate the paint coat is permitted provided the head finishes flush with the surface (or a fraction above). If the head finishes below the surface, the hole must be filled with at least 1 mm of suitable material in a colour similar to the paint. The filler must provide adhesion for a subsequent paint layer.
Pre-drilling is required if not using self-tapping screws.
Nails and pins must be at least twice as long as the thickness of the glazing bead. By using annular ring nails or nails with similar resistance to removal glazing beads with a thickness of up to 18 mm may be fixed using 32 mm long nails.

Is amended:

5.9.2 Installation of glazing units:

Sealed glazing units may be fitted in accordance with Glasindustrien's installation instructions applicable at the time.
Installation systems which deviate from these instructions may be applied provided they have been approved by Glasindustrien and the glazing units are covered by the warranty scheme operated by Glasindustrien.

Companies certified under VinduesIndustrien's Technical Requirements must be in possession of a written agreement with the glazing unit manufacturer detailing his glazing unit installation system(s) and containing full information about any deviation from Glasindustrien's installation instructions.
The agreement between the window manufacturer and the glazing unit supplier must further contain the warranty terms applicable to the glazing units supplied.
In connection with product inspection visits, defects in the installation of glazing units are rated in accordance with Annex 8 point 5.9 while taking into account any deviating requirements under the agreement between the window manufacturer and the glazing unit supplier.

The following section is deleted:

5.9.3 Installation of glass:

While also meeting the additional requirements below, sealed glazing units must comply fully with the installation instructions for sealed glazing units published by Glasindustrien, see Annex 14.

If the glazing beads are located on the outside, the glazing unit must be bonded on the inside to the internal face of the rebate in at least 4 adhesion points in order to make the window or door burglar resistant. If it is considered necessary, glazing units with an edge length in excess of 1.2 m must be bonded to two or more points per side at these sides.
For side hung windows and doors with glazing bars particular care should be taken to block and support each glazing unit diagonally to transfer the total weight of the glass to the hinged casement jamb profile.
Blocks at the lower edge of the glazing unit must have a thickness of at least 4 mm. Blocks located elsewhere must have a thickness of at least 2 mm.

A single layer of glass may be installed using ordinary good putty shaped and cut with a putty knife when used in connection with pins and a prior application of base coat to the rebate. If a single layer of glass is fixed using small glazing beads (10 x 10 mm or less), these must be bonded to the glass by means of silicone sealant or butyl tape.
Please note! In special circumstances, deviation from the description in Annex 14 may be agreed with the glazing unit supplier but even minor deviations must be approved by him in writing.

6. PVCu windows and doors

6.1 Burglary prevention:

The following section:

It must not be possible to remove a glazing unit in one piece from the outside.
(This requirement is assumed to have been met if complying with the rules in 6.8.3, paragraph 4)

Is amended:

It must not be possible to remove a glazing unit in one piece from the outside.
(This requirement is considered to have been met if the glazing unit is spot bonded to the inside of the glazing rebate).

6.2 Thermal performance:

The following section:

If requested by customers, the company must provide information about the window or external door U-value and the proportion of glass in it as well as the total sunlight transmittance and solar energy transmittance of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute ("SBi Anvisning 213").

Is amended:

For each product system, documentation must be provided for a 1230x1480 mm single-light fixed and opening casement window using the manufacturer's standard glazing unit.
For external doors, values must given for a 1230 x 2180 mm standard size panelled door with two standard glazed lights and a mid-rail and a 1230 x 2180 mm flush door.

If requested by a customer, the company must provide information about the U-value (W/m2K) and the proportion of glass ($A_{glazing\ unit}/A_{window}$) of the windows and/or external doors in question as well as the total light transmittance (LT) and solar energy transmittance (g_g) of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute ("SBi Anvisning 213").

6.4.1 Finishing of profiles:

The following section:

Casement rebate measurement: Frame rebate measurement minus 2 x profile system nominal chamber air gap ± 2 mm

Is amended:

Casement measurement: Frame rebate measurement minus 2 x profile system nominal chamber air gap ± 2 mm

6.4.2 Joints:

The following section:

> At least twice a year a documented check must be carried out to ascertain that welding mirror temperature as well as time and pressure during contact with the welding mirror agree with instrument readings and profile supplier instructions. …
>
> …If the manufacturer does not conduct tests as stipulated, external testing with satisfactory results must be conducted twice a year…
>
> …In connection with sealed glazing units the total drainage hole area must meet the requirements stipulated in the installation instructions from Glasindustrien, the Danish Glass and Glazing Industry Federation. Drainage holes must not be connected to cavities containing (metal) reinforcement anywhere.

Is amended:

> At each ordinary inspection visit a documented check must be carried out to ascertain that welding mirror temperature as well as time and pressure during contact with the welding mirror agree with instrument readings and profile supplier instructions. …
>
> … If the manufacturer does not conduct tests as stipulated, external testing producing satisfactory results must be conducted at each ordinary inspection visit.
>
> … In connection with sealed glazing units the total drainage hole area must meet the requirements stipulated in the product agreement with the glazing unit supplier. Drainage holes must not be connected to cavities containing (metal) reinforcement anywhere.

6.7 Hardware and fitting of hardware:

6.7.1 Hardware:

The following section:

Hardware and screws made of materials which are not corrosion resistant and which are fitted outside of the external face of the unit must be hot-galvanized or protected by other surface treatment to ensure resistance meeting Corrosion Class 4. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 240 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Hardware and screws between the wet line and the external face must be made of a material or be protected by a surface treatment which ensures resistance to Corrosion Class 3. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 96 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Hardware and screws inside the wet line must be made of a material or protected by a surface treatment which ensures resistance to Corrosion Class 2. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 48 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Is amended:

Hardware and screws made of materials which are not corrosion resistant and which are fitted outside of the external face of the unit must be hot-galvanized or protected by other surface treatment to ensure resistance meeting Corrosion Class 4, cf. DS/EN 1670. This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 240 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Hardware and screws between the wet line and the external face must be made of a material or be protected by a surface treatment which ensures resistance to Corrosion Class 3, cf. DS/EN 1670. This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 96 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.

Hardware and screws inside the wet line must be made of a material or protected by a surface treatment which ensures resistance to Corrosion Class 2, cf. DS/EN 1670. This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 48 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.

6.7.2 Fitting:

The following section:

Hardware grooves must be adapted to the geometrical shape and thickness of the hardware. Grooves or perforations must not cause water ingress to the wall side of frame profiles.

Is amended:

Hardware grooves must be adapted to the geometrical shape and thickness of the hardware. When drilling or machining frame profiles, the resulting groove or hole must stop short of penetrating the full depth of the profile to avoid water or moisture ingress to the wall side of the profile.

The following section:

6.8 Glass and installation of glass:

6.8.1 Glass and panels:

Individual panes of glass must not cause visual distortion, contain defects in the glass or impurities to a greater extent than described in DS/EN 1279 or DS 1094.0.

Unless requested otherwise by the buyer in writing, sealed glazing units must be DS certified. This means the glazing units must have undergone impartial quality control in accordance with DS/EN 1279 or DS 1094.0 (sealed glazing units, quality control). Glazing units of foreign origin may be used if proof of a similar quality control can be furnished.

Is amended:

6.8 Glass/panels and installation of glazing units:

6.8.1 Glass and panels:

Individual panes of glass must not cause visual distortion or contain defects or impurities in the glass in excess of the criteria for the visual quality of sealed glazing units established by Glasindustrien (the Danish Glass and Glazing Industry Federation).

Sealed glazing units must be manufactured to EN 1279 and the manufacturer of the units be affiliated to an external, accredited certification scheme meeting the requirements of DS/SBC 1279 or similar special requirements.

The following section is deleted:

6.8.2 Glazing beads:

Glazing beads must be designed and fixed in a manner whereby glazing units and sealant between glass and beads may be replaced without significant damage to casements or beads.

The use of glazing beads with co-extruded glazing gaskets is permitted. However, particular care must be taken to ensure a good seal in corners when cutting to length and fitting.

In addition, the fixing of the beads must be sufficiently stable and comprehensive to maintain compression of the sealant between glass and beads.

The length of the beads must be adapted to the longitudinal expansion of the PVCu material and the size of the window.

The following section:

6.8.3 Installation of glass:

Glass must be installed using rubber or rubberlike profiles of suitable design.

The profiles and other installation materials must meet the requirements contained in the installation instructions for sealed glazing units issued by Glasindustrien, see Annex 14.

In connection with side hung windows and doors with glazing bars particular care should be taken to block and support each glazing unit diagonally to transfer the total weight of the glass to the hinged casement jamb profile.

If the glazing beads are located on the outside, the glazing unit must be bonded on the inside to the internal face of the rebate in at least 4 adhesion points in order to make the window or door burglar resistant. If it is considered necessary, glazing units with an edge length in excess of 1.2 m must be bonded to two or more points per side at these sides.

Please note! In special circumstances, deviation from the description in Annex 14 may be agreed with the glazing unit supplier but even minor deviations must be approved by him in writing.

Is amended:

6.8.2 Installation of glazing units:

Sealed glazing units may be fitted in accordance with Glasindustrien's installation instructions applicable at the time.
Installation systems which deviate from these instructions may be applied provided they have been approved by Glasindustrien and the glazing units are covered by the warranty scheme operated by Glasindustrien.

Companies certified under VinduesIndustrien's Technical Requirements must be in possession of a written agreement with the glazing unit manufacturer detailing his glazing unit installation system(s) and containing full information about any deviation from Glasindustrien's installation instructions.
The agreement between the window manufacturer and the glazing unit supplier must further contain the warranty terms applicable to the glazing units supplied.
In connection with product inspection visits, defects in the installation of glazing units are rated in accordance with Annex 8 point 5.9 while taking into account any deviating requirements under the agreement between the window manufacturer and the glazing unit supplier.

7. Metal windows and doors

7.1 Burglary prevention

The following section:

> It must not be possible to remove a glazing unit in one piece from the outside. (This requirement is assumed to have been met if complying with the rules in 7.8.3, paragraph 4)

Is amended:

> It must not be possible to remove a glazing unit in one piece from the outside. (This requirement is considered to have been met if the glazing unit is spot bonded to the inside of the glazing rebate).

7.2 Thermal performance:

The following section:

> Documentation in accordance with DS 418 or DS/EN 10077 part 1 and 2 must be provided for all data concerning the thermal performance of the products.
>
> If requested by customers, the company must provide information about the window or door U-value and the proportion of glass in it as well as the total sunlight transmittance and solar energy transmittance of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute ("SBi Anvisning 213").

Is amended:

> Documentation in accordance with DS 418 or DS/EN 10077 part 1 and 2 must be provided for all data concerning the thermal performance of the products.
>
> For each product system, documentation must be provided for a 1230x1480 mm single-light fixed and opening casement window using the manufacturer's standard glazing unit.
>
> For external doors, values must given for a 1230 x 2180 mm standard size panelled door with two standard glazed lights and a mid-rail and a 1230 x 2180 mm flush door.
> If requested by a customer, the company must provide information about the U-value (W/m2K) and the proportion of glass ($A_{glazing\ unit}/A_{window}$) of the windows and/or external doors in question as well as the total light transmittance (LT) and solar energy transmittance (g_g) of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute ("SBi Anvisning 213").

7.4 Finishing:

7.4.1 Finishing of profiles:

The following section:

Outward opening casement corners which users may come into contact with must not be pointed or sharp enough to be unpleasant to touch….

…Casement rebate measurement:	Frame rebate measurement minus 2 x profile system nominal chamber air gap ± 2 mm

Is amended:

Outward opening casement corners may not be pointed or sharp enough to cause injury or inconvenience in use or during cleaning…

…Casement measurement:	Frame rebate measurement minus 2 x profile system nominal chamber air gap ± 2 mm

7.4.2 Joints:

The following section:

The minimum size of drainage holes is ø8 mm or a 4 x 20 mm gap; holes must be located to ensure the removal of all water. In connection with sealed glazing units the total drainage hole area must meet the requirements stipulated in the installation instructions from Glasindustrien, see Annex 14.

Is amended:

The minimum size of drainage holes is ø8 mm or a 5 x 20 mm gap; holes must be located to ensure the removal of all water. In connection with sealed glazing units the total drainage hole area must meet the requirements stipulated in the product agreement with the glazing unit supplier.

7.7 Hardware and fitting of hardware:

7.7.1 Hardware:

The following section:

Hardware and screws made of materials which are not corrosion resistant and which are fitted outside of the external face of the unit must be hot-galvanized or protected by other surface treatment to ensure resistance to Corrosion Class 4. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 240 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Hardware and screws between the wet line and the external face must be made of a material or be protected by a surface treatment which ensures resistance to Corrosion Class 3. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 96 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Hardware and screws inside the wet line must be made of a material or protected by a surface treatment which ensures resistance to Corrosion Class 2. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 48 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Is amended:

Hardware and screws made of materials which are not corrosion resistant and which are fitted outside of the external face of the unit must be hot-galvanized or protected by other surface treatment to ensure resistance to Corrosion Class 4, cf. DS/EN 1670. This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 240 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.

Hardware and screws between the wet line and the external face must be made of a material or be protected by a surface treatment which ensures resistance to Corrosion Class 3, cf. DS/EN 1670. This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 96 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.

Hardware and screws inside the wet line must be made of a material or protected by a surface treatment which ensures resistance to Corrosion Class 2, cf. DS/EN 1670. This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 48 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.

7.7.2 Fitting of hardware:

The following section:

Hardware grooves must be adapted to the geometrical shape and thickness of the hardware. Grooves or perforations must not cause water ingress to the wall side of frame profiles.

Is amended:

Hardware grooves must be adapted to the geometrical shape and thickness of the hardware. When drilling or machining frame profiles, the resulting groove or hole must stop short of penetrating the full depth of the profile to avoid water or moisture ingress to the wall side of the profile.

The following section:

7.8 Glass and installation of glass:

7.8.1 Glass and panels:

Individual panes of glass must not cause visual distortion, contain defects in the glass or impurities to a greater extent than described in DS/EN 1279 or DS 1094.0.

Unless requested otherwise by the buyer in writing, sealed glazing units must be DS certified. This means the glazing units must have undergone impartial quality control in accordance with DS/EN 1279 or DS 1094.0 (sealed glazing units, quality control). Glazing units of foreign origin may be used if proof of a similar quality control can be furnished.

Panels require the use of materials which remain stable when exposed to humidity to ensure the panel construction remains permanently flush and tight.

Is amended:

7.8 Glass/panels and installation of glazing units:

7.8.1 Glass and panels:

Individual panes of glass must not cause visual distortion or contain defects or impurities in the glass in excess of the criteria for the visual quality of sealed glazing units established by Glasindustrien (the Danish Glass and Glazing Industry Federation).

Sealed glazing units must be manufactured to EN 1279 and the manufacturer of the units be affiliated to an external, accredited certification scheme meeting the requirements of DS/SBC 1279 or similar special requirements.

Panels require the use of materials which remain stable when exposed to humidity to ensure the panel construction remains permanently flush and tight.

7.8.2 Glazing beads:

The following section:

Glazing beads must be designed and fixed in a manner whereby glazing units and sealant between glass and beads may be replaced without significant damage to casements or beads.

In addition, the fixing of the beads must be sufficiently stable and comprehensive to maintain compression of the sealant between glass and beads.

For externally fitted glazing beads the horizontal beads must be continuous.

In principle, beads must be cut to a precise measurement but undersizes of up to 0.5 mm are accepted.

Is amended:

Sealed glazing units may be fitted in accordance with Glasindustrien's installation instructions applicable at the time.
Installation systems which deviate from these instructions may be applied provided they have been approved by Glasindustrien and the glazing units are covered by the warranty scheme operated by Glasindustrien.

Companies certified under VinduesIndustrien's Technical Requirements must be in possession of a written agreement with the glazing unit manufacturer detailing his glazing unit installation system(s) and containing full information about any deviation from Glasindustrien's installation instructions.
The agreement between the window manufacturer and the glazing unit supplier must further contain the warranty terms applicable to the glazing units supplied.
In connection with product inspection visits, defects in the installation of glazing units are rated in accordance with Annex 8 point 5.9 while taking into account any deviating requirements under the agreement between the window manufacturer and the glazing unit supplier.

The following section has been deleted:

7.8.3 Installation of glass:

Glass must be installed using rubber or rubberlike plastic profiles of suitable design.

The profiles and other installation materials must meet the requirements contained in the installation instructions for sealed glazing units issued by Glasindustrien, see Annex 14.

In connection with side hung windows and doors with glazing bars particular care should be taken to block and support each glazing unit diagonally to transfer the total weight of the glass to the hinged casement jamb profile.

If the glazing beads are located on the outside, the glazing unit must be bonded on the inside to the internal face of the rebate in at least 4 adhesion points in order to make the window or door burglar resistant. If it is considered necessary, glazing units with an edge length in excess of 1.2 m must be bonded to two or more points per side at these sides.

Please note! In special circumstances, deviation from the description in Annex 14 may be agreed with the glazing unit supplier but even minor deviations must be approved by him in writing.

8. Timber/aluminium windows and doors

8.1 Burglary prevention

The following section:

It must not be possible to remove a glazing unit in one piece from the outside. (This requirement is assumed to have been met if complying with the rules in 8.8.3, paragraph 4)

Is amended:

It must not be possible to remove a glazing unit in one piece from the outside. (This requirement is considered to have been met if the glazing unit is spot bonded to the inside of the glazing rebate).

8.2 Thermal performance:

The following section:

Documentation in accordance with DS 418 or DS/EN 10077 part 1 and 2 must be provided for all data concerning the thermal performance of the products.

If requested by customers, the company must provide information about the window or external door U-value and the proportion of glass in it as well as the total sunlight transmittance and solar energy transmittance of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute.

Is amended:

Documentation in accordance with DS 418 or DS/EN 10077 part 1 and 2 must be provided for all data concerning the thermal performance of the products.

For each product system, documentation must be provided for a 1230x1480 mm single-light fixed and opening casement window using the manufacturer's standard glazing unit.

For external doors, values must given for a 1230 x 2180 mm standard size panelled door with two standard glazed lights and a mid-rail and a 1230 x 2180 mm flush door.

If requested by a customer, the company must provide information about the U-value (W/m2K) and the proportion of glass (Aglazing unit/Awindow) of the windows or external doors in question as well as the total light transmittance (LT) and solar energy transmittance (gg) of the glazing unit in accordance with the Danish and European standards applicable at the time, cf. for example Instruction No. 213 from The Danish Building Research Institute ("SBi Anvisning 213").

8.3 Timber material

The following section:

If there is more than one timber species in the hatched areas of illustrations in Annex 11, the applicable base coat and surface treatment requirement shall be the one which applies to the species with the poorest natural durability.

Is amended:

If there is more than one timber species in the hatched areas of illustrations in Annex 10, the applicable base coat and surface treatment requirement shall be the one which applies to the species with the poorest natural durability.

Spruce:

The following section:

The declaration must cover at least the points mentioned in Annex 13.

Is amended:

The declaration must cover at least the points mentioned in Annex 12.

Larch:

The following section:

… Timber density must be at least 500 kg/m^3 at a moisture content of 12%.
… The declaration must cover at least the points mentioned in Annex 12.

Is amended:

... The mean timber density must be at least 500 kg/m^3 at a moisture content of 12%.
…The declaration must cover at least the points mentioned in Annex 11.

Pine:

The following section:

… Timber density must be at least 500 kg/m^3 at a moisture content of 12%...
… The declaration must cover at least the points mentioned in Annex 12.

Is amended:

… The mean timber density must be at least 500 kg/m^3 at a moisture content of 12%....
… The declaration must cover at least the points mentioned in Annex 11.

Requirements for the proportion of heartwood in pine

The following section:

> The proportion of heartwood must constitute at least 60 % in areas outside the wet line. In laminated profiles each laminate must have a heartwood proportion of at least 60% in areas utside the wet line. The location of the wet line and the applicable rules/exceptions to rules are mentioned in Annex 11.

Is amended:

> The proportion of heartwood must constitute at least 60 % in areas outside the wet line. In laminated profiles each laminate must have a heartwood proportion of at least 60% in areas outside the wet line. The location of the wet line and the applicable rules/exceptions to rules are mentioned in Annex 10.

Inspection of heartwood proportion - treatment systems 1, 2 and 5:

The following section:

> … The proportion of heartwood in the hatched areas shown in Annex 11 is then recorded.

Is amended:

> … The proportion of heartwood in the hatched areas shown in Annex 10 is then recorded.

8.3.3 Workpieces in hardwood:

The following section:

> Single rooted pearl knots permitted in oak

Is amended:

> Single rooted pearl knots permitted

8.3.4 Additional definitions and requirements for workpieces in softwood:

Laminated timber:

The following section:

> Both frame and casement timbers may be glue-laminated from smaller laminates. In laminated profiles each laminate in the hatched areas of Annex 11 illustrations must have a heartwood proportion of at least 60%.

Is amended:

> Both frame and casement timbers may be glue-laminated from smaller laminates. In laminated profiles each laminate in the hatched areas of Annex 10 illustrations must have a heartwood proportion of at least 60%.

The following section:

8.3.7 Type testing:

In the following cases, a type testing report from an recognized testing institution must be provided:

- the frame rebate of the unit is manufactured wholly or partly in synthetic materials
- if hinges are fixed to synthetic material in the frame and/or casement profile
- if synthetic materials contribute to the transfer of load from casement to frame.

Testing serves the following purposes:
- to demonstrate sufficient strength and stiffness in the frame profile, primarily in terms of the connection between timber and synthetic materials
- to demonstrate the stability and anchoring of hinges
- to demonstrate the overall stability and functioning of the unit.

Testing is conducted using a side hung, outward opening window with a width x height ratio of 900 x 1000 mm.
If the manufacturer's product range comprises windows with a width/height ratio which causes higher loads on hinges, tests must be conducted using this size of window.

Test rig and setup

The test rig is constructed as a stable and rigid frame construction with a 910 x 1010 mm "wall hole" or adapted to a different window size, cf. above.The unit to be tested is installed in the wall hole with a tight fit to the test rig at the cill and at the hinge side jamb. At the hinge side, frame screws are inserted into the timber frame rebate at the level of the hinges and screwed through the timber section of the frame into the test rig to secure the unit to the rig.
At the handle side, the frame is blocked at fastening points and fixed at the same points using frame screws.
Only the timber section of the frame is inside the test rig; the PVCu/aluminium section of the frame and most of the casement are located outside the test rig opening.

Initial recording

It is checked that when closed, the frame and casement construction is completely flush.
The tightness of all screws in hinges anchored in synthetic materials is measured with a torque screw driver and the values recorded.
The gap between casement and frame is recorded for each corner of the unit in both directions (a total of eight measurements).

Test procedure - 90° opening

The casement is turned to 90° and secured in this position by means of a lateral guide.
A load is applied vertically to the casement head 50 mm from the outer casement corner.
The load is applied in 20 kg increments and at 3 minute intervals between each increment.
The final increment takes the total load to 80 kg which is also maintained for 3 minutes.

Recording of test results

After each load increment, any measurable movement/deformation at the junction of the frame rebate and internal frame section is recorded. This recording must concentrate on the areas where hinges are fitted.
3-5 minutes after relieving the load of the final load increment, any lasting deformation between frame rebate and internal frame section is measured and recorded.
This is followed by measuring the gap between casement and frame and comparing the result with the initial recording of values.
The tightness of screws in hinges anchored in synthetic materials is recorded.

When testing under Climatic Conditions 2 (see below), values after the final load increment are only recorded when frame and casement materials have cooled to room temperature.

Test procedure - 30° opening

The casement is turned to 30° opening angle and secured in this position by means of a lateral guide.

Then the test cycle is completed and the results recorded in accordance with the procedure described under ***Test procedure - 90° opening.***

Climatic Conditions

The above test procedure and recording of results must be conducted under two different climatic conditions for both opening angles.

1. testing at room temperature (20º C)
2. testing after heating the hinge side to 65° C.

Heating to 65° C is considered complete 15 minutes after recording a temperature of 65° C of the synthetic material where it faces the hinge.

Approval criteria

The materials and construction are approved if the following criteria have been fulfilled:

- no lasting deformation between the timber and synthetic material section of the frame exceeding 0.5 mm
- no lasting change in the gap between casement and frame exceeding 1.0 mm at all measuring points
- no substantial change in the tightness of screws in hinges anchored in synthetic materials.

Is amended:

8.3.7 Type testing:

In the following cases, a type testing report from a recognized testing institution must be provided:
- if the frame rebate of the unit is manufactured wholly or partly in synthetic materials
- if hinges are fixed to synthetic material in the frame and/or casement profile
- if synthetic materials contribute to the transfer of load from casement to frame.

Testing serves the following purposes:
- to demonstrate sufficient strength and stiffness in the frame profile, primarily in terms of the connection between timber and synthetic materials
- to demonstrate the stability and fixing of hinges
- to demonstrate the overall stability and functioning of the unit.

Testing is conducted using a side hung, outward opening window where casement width x casement height = 700 x 700 mm.

Door units are tested using an outward opening door with a casement width and height of 950 x 2100 mm.

Test rig and setup

The test rig is constructed as a stable and rigid frame construction with a "wall hole", the width and height of which exceeds the outer frame dimensions of the unit by 10 mm.
The unit to be tested is installed in the wall hole with a tight fit to the test rig at the cill and at the hinge side jamb. At the hinge side, frame screws are inserted into the timber frame rebate at the level of the hinges and screwed through the timber section of the frame into the test rig to secure the unit to the rig.
At the handle side, the frame is blocked at fastening points and fixed at the same points using frame screws.

Only the timber section of the frame is inside the test rig; the synthetic/aluminium section of the frame and most of the casement are located outside the test rig opening.

Preload

A 400 N preload is applied vertically to the casement head 50 mm from the outer casement corner.
The preload is applied at 90° or the max. opening angle if this is less than 90° and again at 30°.
The load is applied for one minute at both opening angles.

Initial recording

It is checked that when closed, the frame and casement construction is completely flush.
The tightness of all screws in hinges fixed to synthetic materials is measured with a torque screw driver and the values recorded.
The starting point for each of the four individual tests to be conducted is the recording of the following parameters:
The gap between casement and frame is recorded for each corner of the unit in both directions (a total of eight measurements).
The geometry at the junction of the synthetic/alu frame rebate and the internal timber frame section is recorded.

Test procedure - 90° opening

The casement/door leaf is turned to 90° or to max. opening angle if this is less than 90°; the casement/door leaf is secured in this position by means of a lateral guide.
A load is applied vertically to the casement/door leaf head 50 mm from the outer corner of the casement/leaf.
The load is applied in steps of 200 N with a three minute interval between each step. During the application of the 400N load, the movements/deformations listed under Recording of test results are measured and recorded.
Once the parameters for a load of 400 N (for doors: 600 N) have been recorded, the load is relieved and a subsequent set of measurements taken.

Test procedure - 30° opening

The casement/door leaf is turned to 30° opening angle and secured in this position by means of a lateral guide.
Then the test cycle is completed in accordance with the procedure described under the sections Test procedure - 90° opening and Recording of test results below

Safety testing

The casement/door leaf is turned to 90° or to max. opening angle if this is less than 90°; the casement/door leaf is secured in this position by means of a lateral guide.
A load of 600 N (for doors: 800 N) is applied vertically to the casement/door leaf head 50 mm from the outer corner of the casement/door leaf.
After three minutes, the load is relieved and the same test conducted at an opening angle of 30°.

Climatic Conditions

The test procedures and recording of test results listed must be conducted under two different climatic conditions for both opening angles.

1. Testing under laboratory conditions.
2. Testing when the hinge side has been heated to 65° C.

Heating to 65° C is considered complete 15 minutes after recording a temperature of 65° C of the synthetic material where it faces the hinge.

Test sequence

The test sequence comprises a total of four individual tests and a final safety test.

The individual tests are conducted in the following sequence:
90° opening – climatic conditions 1
30° opening – climatic conditions 1
90° opening – climatic conditions 2
30° opening – climatic conditions 2

The safety test, which is the final test, is conducted at:
90° opening – climatic conditions 1
30° opening – climatic conditions 1

Recording of test results

During the application of the 400N load (for doors: 600 N), any measurable movement/deformation at the junction of the frame rebate and internal frame section is measured and recorded. This recording must concentrate on the areas where hinges are fitted.
3-5 minutes after relieving the 400 N load (for doors: 600 N), any lasting deformation between the frame rebate and internal frame section is measured and recorded.
This is followed by measuring the gap between casement and frame and comparing the result with the initial recording of values. This procedure applies to both 90° and 30° opening.
After load step 400 N (for doors: 600 N), 30° opening, climatic conditions 2 the tightness of screws in hinges fixed to synthetic materials is recorded.
During the application of the 600 N load (for doors: 800 N) any failures in materials or construction are recorded.
Under climatic conditions 2, the above measurements are only taken after allowing the synthetic material at the hinge side to acclimatize for 10 minutes

Approval criteria

The materials and construction are approved if the values recorded after load step 400 meet the following criteria:

- no lasting deformation between the timber and synthetic material section of the frame exceeding 1,0 mm
- no lasting change in the gap between casement and frame exceeding 1,5 mm at all measuring points

any reduction in the tightness of screws fixed in synthetic materials does not exceed 20%.

During safety testing, the final 600 N load step (for doors: 800 N) must not cause failure where the synthetic/alu frame rebate is joined to the timber section, nor failure in hinges, their fixing or in casement corner joints.

8.5 Timber preservative treatment

8.5.1 General:

The following section:

> … The surface treatment must further meet the requirements listed in Annex 16 of these Regulations.

Is amended:

> … The surface treatment must further meet the requirements listed in Annex 14 of these Requirements.

8.5.4 Treatment system for timber-aluminium units:

Treatment system 5:

The following section:

> The surface must further meet the performance requirements listed in Annex 16 of these Regulations.

Is amended:

> The surface must further meet the performance requirements listed in Annex 14 of these Requirements.

8.8 Hardware and fitting of hardware:

8.8.1 Hardware:

The following section:

Hardware and screws made of materials which are not corrosion resistant and which are fitted outside of the external face of the unit must be hot-galvanized or protected by other surface treatment to ensure resistance to Corrosion Class 4. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 240 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Hardware and screws between the wet line and the external face must be made of a material or be protected by a surface treatment which ensures resistance to Corrosion Class 3. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 96 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Hardware and screws inside the wet line must be made of a material or protected by a surface treatment which ensures resistance to Corrosion Class 2. This can be documented by subjecting to salt spray testing in accordance with ISO 9227 for 48 hours. Test results must be evaluated in accordance with DS/EN/ISO 10289 and the rating achieved be at least 4.

Is amended:

Hardware and screws made of materials which are not corrosion resistant and which are fitted outside of the external face of the unit must be hot-galvanized or protected by other surface treatment to ensure resistance to Corrosion Class 4, cf. DS/EN 1670. This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 240 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.

Hardware and screws between the wet line and the external face must be made of a material or be protected by a surface treatment which ensures resistance to Corrosion Class 3, cf. DS/EN 1670. . This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 96 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.

Hardware and screws inside the wet line must be made of a material or protected by a surface treatment which ensures resistance to Corrosion Class 2, cf. DS/EN 1670. . This can be documented by subjecting to salt spray testing in accordance with DS/EN ISO 9227 for 48 hours. Test results must be evaluated in accordance with DS/EN ISO 10289 and the rating achieved be at least 4.

8.8.2 Fitting of hardware:

The following section:

Hardware grooves must be adapted to the geometrical shape and thickness of the hardware.
Grooves or perforations must not cause water ingress to the wall side of frame profiles.
If the fitting of a lock case etc. exceptionally requires drilling (machining) through to the glazing rebate, the access of condensation-causing air must be prevented e.g. by taping.

Is amended:

Hardware grooves must be adapted to the geometrical shape and thickness of the hardware.
When drilling or machining frame profiles, the resulting groove or hole must stop short of penetrating the full depth of the profile to avoid water or moisture ingress to the wall side of the profile.

The following section:

8.9 Glass and installation of glass:

8.9.1 Glass and panels:

Individual panes of glass must not cause visual distortion, contain defects in the glass or impurities to a greater extent than described in DS/EN 1279 or DS 1094.0.

Unless requested otherwise by the buyer in writing, sealed glazing units must be DS certified. This means the glazing units must have undergone impartial quality control in accordance with DS/EN 1279 or DS 1094.0 (sealed glazing units, quality control). Glazing units of foreign origin may be used if proof of a similar quality control can be furnished.

Panels require the use of materials which remain stable when exposed to humidity to ensure the panel construction remains permanently flush and tight.

Is amended:

8.9 Glass/panels and installation of glazing units:

8.9.1 Glass and panels:

Individual panes of glass must not cause visual distortion or contain defects or impurities in the glass in excess of the criteria for the visual quality of sealed glazing units established by Glasindustrien (the Danish Glass and Glazing Industry Federation).

Sealed glazing units must be manufactured to EN 1279 and the manufacturer of the units be affiliated to an external, accredited certification scheme meeting the requirements of DS/SBC 1279 or similar special requirements.

Panels require the use of materials which remain stable when exposed to humidity to ensure the panel construction remains permanently flush and tight.

The following section is deleted:

8.9.2 Glazing beads:

Glazing beads must be designed and fixed in a manner whereby glazing units and sealant between glass and beads may be replaced without significant damage to casements or beads.

In addition, the fixing of the beads must be sufficiently stable and comprehensive to maintain compression of the sealant between glass and beads.

For externally fitted glazing beads the horizontal beads must be continuous.

In principle, beads must be cut to a precise measurement but undersizes of up to 0.5 mm are accepted.

This edition has added:

8.9.2 Installation of glazing units:

Sealed glazing units may be fitted in accordance with Glasindustrien's installation instructions applicable at the time.
Installation systems which deviate from these instructions may be applied provided they have been approved by Glasindustrien and the glazing units are covered by the warranty scheme operated by Glasindustrien.

Companies certified under VinduesIndustrien's Technical Requirements must be in possession of a written agreement with the glazing unit manufacturer detailing his glazing unit installation system(s) and containing full information about any deviation from Glasindustrien's installation instructions.
The agreement between the window manufacturer and the glazing unit supplier must further contain the warranty terms applicable to the glazing units supplied.
In connection with product inspection visits, defects in the installation of glazing units are rated in accordance with Annex 8 point 5.9 while taking into account any deviating requirements under the agreement between the window manufacturer and the glazing unit supplier.

Annex 1, *Minimum requirements as regards extent of information in brochures*

The following section:

4.2 Surface treatment:	Opaque paint treatment (reference to Annex 16)
5.1 Functional testing:	Yes/No (If Yes, state test method and outcome)

Is amended:

4.2 Surface treatment:	Opaque paint treatment (reference to Annex 14)
5.1 Functional testing:	Yes/No (If Yes, state test method and class in accordance with EN 14351-1)

Annex 1, *Minimum requirements as regards extent of information in brochures*

The following section is deleted:

6.1	U-value:	W/m² °C for window size 1230 x 1480 mm

Annex 8, *Recording and evaluation of samples*, page 3 of 24, *Methods:*

The following section:

… listed in Annex 15.

Is amended:

… listed in Annex 13.

Annex 8, page 5 of 24

Specific defects: Timber and timber/aluminium (timber part)

The following section:

Description of defect	Defect category				Reference Tech. Reg.
	K	V	U	B	
5.3 and 8.3 Timber material					
Pine					
Missing declaration of pine rated as one defect per element		V			5.3, 8.3
Non-compliance with heartwood proportion requirement: See description under 5.1.4					5.3, 8.3
Moisture content up to 1% above/below permitted limit				B	2.2
Moisture content between 1 and 2 % above/below permitted limit			U		2.2
Moisture content deviating by more than 2 % from permitted limit		V			2.2
The measured average width of annual ring ≥ 4 mm		V			5.3.3, 8.3.3

Is added and amended:

Description of defect	Defect category				Reference Tech. Reg.
	K	V	U	B	
5.1 and 8.1 Burglary prevention					
No bonding to inside of glazing rebate		V			5.1
5.3 and 8.3 Timber material					
Pine					
Missing declaration of pine rated as one defect per element		V			5.3, 8.3
Non-compliance with heartwood proportion requirement: See description under 5.3					5.3, 8.3
Moisture content up to 1% above/below permitted limit				B	2.2
Moisture content between 1 and 2 % above/below permitted limit			U		2.2
Moisture content deviating by more than 2 % from permitted limit		V			2.2
The measured average width of annual ring > 4 mm		V			**5.3, 8.3**

Annex 8, page 6 of 24

The following section:

Resin exudation				B	Annex 15

Is amended:

Resin exudation				B	Annex 14

Annex 8, page 10 of 24

The following section:

Not filled with adhesive (This also applies to 5.5.3. and 8.5.4.)		V			5.6.2

Is amended:

Not filled with adhesive (This also applies to 5.6.3. and 8.4.4.)		V			5.6.2

Annex 8, page 12 of 24

The following section:

5.9 Glass and installation of glass					
Cracked glazing unit	K				5.9.1, 8.9.1
Distortion, defects in glass or impurities larger than described in DS 1094.0		V			5.9.1, 8.9.1

Is amended:

5.9 Glass and installation of glass					
No written agreement with glazing unit supplier		V			5.9.2
Cracked glazing unit	K				5.9.1, 8.9.1
Distortion, defects in glass or impurities exceeding Glasindustrien's criteria for visual quality		V			5.9.1, 8.9.1

Annex 8, page 14 of 24

The following section:

Description of defect	Defect category				Reference Tech. Reg.
	K	V	U	B	
Blocking of sealed glazing units:					5.9.3, 8.9.3
Covering of glazing unit spacer bar:					5.9.3, 8.9.3
Insufficiently burglary-resistant installation of sealed glazing units		V			5.9.3, 8.9.3
Glazing gaskets:					5.9.3, 8.9.3

Is amended:

Blocking of sealed glazing units:					5.9, 8.9
Covering of glazing unit spacer bar:					5.9, 8.9
Insufficiently burglary-resistant installation of sealed glazing units		V			5.1, 8.1
Glazing gaskets:					5.9, 8.9

Annex 8, page 14 of 24

The following section:

No sealing between timber and aluminium at casement head		V			8.4.5

Is amended:

No sealing between timber and aluminium at casement head		V			8.4.3

Annex 8, page 15 of 24

The following section:

Description of defect	Defect category				Referen-
	K	V	U	B	Tech. eg.
6.3 Profile material					

Is added:

Specific defects: PVCu

Defect categories: K = critical, V = significant, U = immaterial, B = comment

Description of defect	Defect category				Referen-
	K	V	U	B	Tech. eg.
6.1 Burglary prevention					
No bonding to inside of glazing rebate		**V**			**6.1**
6.3 Profile material					

Annex 8, page 17 of 24

The following section:

6.8 Glass and installation of glass					
Cracked glazing unit	K				6.8.1
Distortion, defects in glass or impurities larger than described in DS 1094.0					

Is amended:

6.8 Glass/panels and installation of glazing units					
No written agreement with glazing unit supplier		V			6.8.2
Cracked glazing unit	K				6.8.1
Distortion, defects in glass or impurities exceeding Glasindustrien's criteria for visual quality		V			6.8.1

Annex 8, page 19 of 24

The following section:

Description of defect	Defect category				Reference Tech. Reg.
	K	V	U	B	
7.3 and 8.3.5 Profile material and aluminium material					

Is added:

Description of defect	Defect category				Reference Tech. Reg.
	K	V	U	B	
7.1 and 8.1 Burglary prevention					
No bonding to inside of glazing rebate		V			7.1, 8.1
7.3 and 8.3.5 Profile material and aluminium material					

Annex 8, page 20 of 24

The following section:

7.5 Surface treatment					
Average layer thickness on coated surface of individual item below 40 µm		V			7.5.1, 8.6.1
Average layer thickness on coated surface of entire sample falls outside of 50-120 µm (recorded as 1 defect for the entire sample)			U		7.5.1, 8.6.1
Average layer thickness on anodized surface below 16 µm (recorded as 1 defect for the entire sample)			U		7.5.2, 8.6.2

Is amended:

7.5 Surface treatment					
Average layer thickness on coated surface of individual item below 40 µm for wet application of paint and 50 µm for powder coating		V			7.5.1, 8.6.1
Average layer thickness on coated surface of entire sample falls outside of 50-120 µm for powder coating and 40 -70 µm for wet application of paint (recorded as 1 defect for the entire sample)		V			7.5.1, 8.6.1
Average layer thickness on anodized surface below 16 µm (recorded as 1 defect for the entire sample)		V			7.5.2, 8.6.2

Annex 8, page 23 of 24

The following section:

7.8 Glass and installation of glass					
Cracked glazing unit	K				7.8.1, 8.9.1
Distortion, defects in glass or impurities larger than described in DS 1094.0		V			7.8.1, 8.9.1
No certificate on sealed glazing units		V			7.8.1, 8.9.1
Glazing unit not cleaned			U		7.8.1, 8.9.1

Is amended:

7.8 Glass and installation of glass					
No written agreement with glazing unit supplier		V			7.8.2
Cracked glazing unit	K				7.8.1, 8.9.1
Distortion, defects in glass or impurities exceeding Glasindustrien's criteria for visual quality		V			7.8.1, 8.9.1

Annex 8, page 24 of 24

The following section:

Description of defect	Defect category				Reference Tech. Reg.
	K	V	U	B	
Glazing gaskets:					7.8.3, 8.9.3

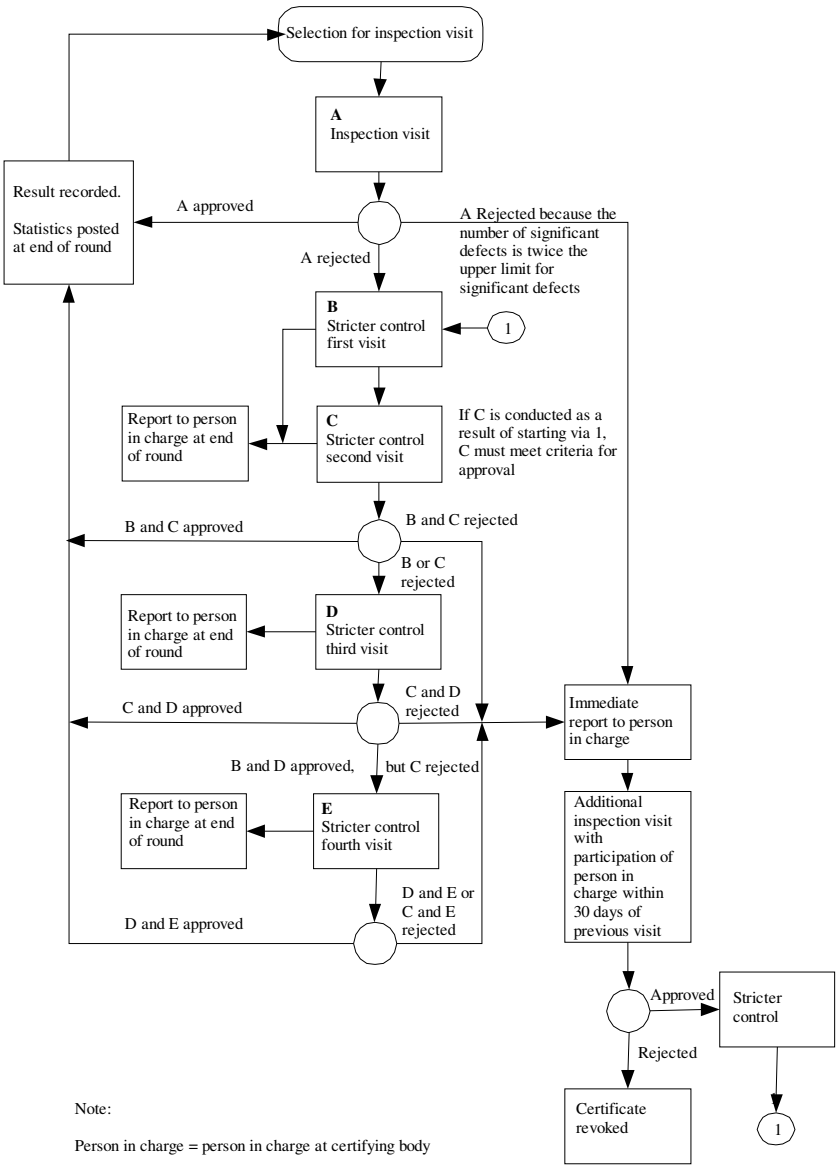
Is amended:

Description of defect	Defect category				Reference Tech. Reg.
	K	V	U	B	
Glazing gaskets:					7.8, 8.9

Following section is deleted:

Annex 10,

Flow chart of inspection and control procedure


Selection for inspection visit
A
Inspection visit
Result recorded.
Statistics posted at end of round
A approved
A Rejected because the number of significant defects is twice the upper limit for significant defects
A rejected
B
Stricter control first visit
1
Report to person in charge at end of round
C
Stricter control second visit
If C is conducted as a result of starting via 1, C must meet criteria for approval
B and C approved
B and C rejected
B or C rejected
Report to person in charge at end of round
D
Stricter control third visit
C and D approved
C and D rejected
Immediate report to person in charge
B and D approved,
but C rejected
Report to person in charge at end of round
E
Stricter control fourth visit
Additional inspection visit with participation of person in charge within 30 days of previous visit
D and E or C and E rejected
D and E approved
Approved
Stricter control
Rejected
Certificate revoked
1
Note:
Person in charge = person in charge at certifying body

The following section:

Annex 11, page 1 of 6,

Requirements for the minimum proportion of heartwood

Is amended:

Annex 10, page 1 of 6,

Requirements for the minimum proportion of heartwood

The following section:

Annex 12,

Paradigm for the declaration of pine (European Redwood) /larch

-	*that the heartwood diameter of the log at the top end exceeded 50% of the top diameter*	
-	That planks * and boards have been sawn from a butt log with a top diameter in excess of 200 mm or the following log (log no. 2) with a top diameter in excess of 170 mm	
-	that the log has been handled and stored in a way so as not to incur risk of bacterial attack	**
-	that 60% of the planks have a heartwood proportion in excess of 60%	**
-	that the heartwood proportion in the remaining planks is in excess of 40%	**
-	that the moisture content is 12 ± 2% for joinery and 18 ± 4% when dry for dispatching	**
-	that the width of the annual rings is less than 4 mm	
-	that the density is above 500 kg/m³ (12 ±2% moisture)	
-	that the wood has not been treated with a chemical preservative	

*) Planks are defined as all dimensions with a thickness in excess of 48 mm
**) Sampling (sample size) in accordance with Svensk Standard (Swedish Standard) SS 232740

Is amended:

Annex 11,

Paradigm for the declaration of pine (European Redwood) /larch

-	*that the heartwood diameter of the log at the top end exceeded 50% of the top diameter*	
-	That planks and boards have been sawn from a butt log with a top diameter in excess of 200 mm or the following log (log no. 2) with a top diameter in excess of 170 mm …….	*
-	that the log has been handled and stored in a way so as not to incur risk of bacterial attack	
-	that 60% of the planks have a heartwood proportion in excess of 60% ……..	**
-	that the heartwood proportion in the remaining planks is in excess of 40% ……...	**
-	that the moisture content is 12 ± 2% for joinery and 18 ± 4% when dry for dispatching……	***
-	that the width of the annual rings is less than 4 mm	
-	that the density is above 500 kg/m³ (12 ±2% moisture)…….	
-	that the wood has not been treated with a chemical preservative	

*) Planks are defined as all dimensions with a thickness in excess of 48 mm
**) Sampling (sample size) in accordance with Svensk Standard (Swedish Standard) SS 232740
***) When documenting density it is recommended to indicate the weight and volume on each pack

The following section:

Annex 13,
Paradigm for the declaration of spruce (European Whitewood)

Is amended:

Annex 12,
Paradigm for the declaration of spruce (European Whitewood)

Following section is deleted:

Annex 14, page 1 of 4,
Monteringsanvisning Grundlag for garantiordningen
Requirements for the checking and accuracy of measuring equipment

The following section:

Annex 15,
Requirements for the checking and accuracy of measuring equipment

Is amended:

Annex 13,
Requirements for the checking and accuracy of measuring equipment

The following section:

Annex 16,
Expected outcome of industrial surface treatment of timber elements

Is amended:

Annex 14,
Expected outcome of industrial surface treatment of timber elements

The following section:

Annex 17, page 1 of 2,
Standards at a glance

Is amended:

Annex 15, page 1 of 2,
Standards at a glance
The following section:

Annex 18,

Technical Regulations - current and previous editions

…6th edition - May 2005
6th Edition, Rev. 1 - July 2005
6th Edition, Rev. 2 - May 2006
6th Edition, Rev. 3 - October 2006

Is amended:

Annex 16,

Technical Regulations - current and previous editions

…6th edition - May 2005
6th Edition, Rev. 1 - July 2005
6th Edition, Rev. 2 - May 2006
6th Edition, Rev. 3 - December 2006
7th Edition - January 2008